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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/900,469	07/09/2001	Ali Rusta-Sallehy	9351-70	4143
7590 06/23/2004				
Bereskin & Parr Box 401 40 King Street West Toronto, ON M5H 3Y2 CANADA		EXAMINER KERNS, KEVIN P		
		ART UNIT PAPER NUMBER 1725		

DATE MAILED: 06/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/900,469	<b>Applicant(s)</b> RUSTA-SALLEHY ET AL.	
	<b>Examiner</b> Kevin P. Kerns	<b>Art Unit</b> 1725	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 May 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) 16-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☒ Claim(s) 1,3,12 and 14 is/are objected to.
- 8) ☒ Claim(s) 1-37 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/14/01, 4/24/02, 4/5/03</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicants' election of Group I (claims 1-15) in the reply filed on May 28, 2004 is acknowledged. Because the applicants did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "the first supplying device" and "delivery means" (in claims 1 and 14) must be clearly shown or the feature(s) canceled from the claim(s), as "the first supplying device" could be one or more of structures 22, 24, and/or 26, while the "delivery means" could be either line 6 or recovered water line 12 (also see 35 USC 112 section below). No new matter should be entered.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief

description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "14" has been used to designate both a heat exchanger and a line/conduit in Figure 2 ("14" directed to the line/conduit in Figure 2 should be deleted). Also in Figure 2, reference character "26" has been used to designate both a pump (below the reactor 20) and a filter (see paragraph [0040]) between reference numbers 14 and 11 (it is suggested to denote the filter with a different reference number). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

5. The disclosure is objected to because of the following informalities: in paragraph [0006], 4<sup>th</sup> line, "phased" should be changed to "phase". On page 11, 1<sup>st</sup> line, "a" should be changed to "at" after "tank 4". On page 11, 6<sup>th</sup> line, "lamp" should be changed to "loop". In paragraph [0033], line 14, "continue" should be changed to "continues" after "stack 3". In paragraph [0033], line 20, the extra comma should be deleted before "when". On page 12, lines 3-5, it is unclear what is meant by the question (in brackets). On page 13, 5<sup>th</sup> line, "PH" should be changed to "pH". On page 14, 4<sup>th</sup> line from the bottom, the underlining in the reaction should be changed to an arrow. In paragraph [0042], 1<sup>st</sup> line, "skills" should be changed to "skill". Throughout the specification, several of the chemical compounds are written with numerals that should be written as subscripts. Appropriate correction is required.

### ***Claim Objections***

6. Claims 1, 3, 12, and 14 are objected to because of the following informalities: in claim 1, lines 6 and 8, "device" should be changed to "means" after "storage" in both instances, for consistency with "storage means" in line 2 of the claim. In claim 3, 3<sup>rd</sup> line, "isin" should be changed to "is in". In claim 12, 2<sup>nd</sup> line, "the group consisting of" should be added after "from" to provide proper Markush language. In claim 14, 3<sup>rd</sup> line, "device" should be changed to "means" after "storage", for consistency with "storage means" in claim 1. In claim 14, lines 4 and 5, "means" should be changed to "device" after "supplying" in both instances, for consistency with "first supplying device" in claim 1. Appropriate correction is required.

### ***Double Patenting***

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-15 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 17, 18, 22, 23, and 25-36 of U.S. Patent No. 6,727,012. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed system includes a storage means for storing a chemical hydride solution, a chamber (reactor) containing a catalyst for generation of hydrogen, a supplying device between the storage means and the reactor, a delivery (recovery) means to recover water, a return line to supply the recovered water to the solution, a flow controller, and a heat exchanger. One of ordinary skill in the art would have recognized that the structural features of the present application are nearly identical to those set forth in US 6,727,012, and it would have been obvious to remove the fuel cell stack set forth in US 6,727,012 to synthesize hydrogen gas in the absence of a fuel cell stack, as open-ended "comprising" language exists in the present application.

9. Claims 1, 14, and 15 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7, 10, 12-15, and 18-20 of U.S. Patent No. 6,737,184. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed system includes a storage means for storing a chemical hydride solution, a chamber (reactor) containing a catalyst for generation of hydrogen, a supplying device between the storage means and the reactor, a delivery (recovery) means to recover water, a return line to supply the recovered water to the solution, a flow controller, and a heat

exchanger. One of ordinary skill in the art would have recognized that the structural features of the present application are nearly identical to those set forth in US 6,737,184, and it would have been obvious to remove the fuel cell stack set forth in US 6,737,184 to synthesize hydrogen gas in the absence of a fuel cell stack, as open-ended "comprising" language exists in the present application.

10. Claims 1, 14, and 15 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 5-11, 13-16, and 21-23 of copending Application No. 09/986,636 (US 2003/0091876). Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed system includes a storage means for storing a chemical hydride solution, a chamber (reactor) containing a catalyst for generation of hydrogen, a supplying device between the storage means and the reactor, a delivery (recovery) means to recover water, a return line to supply the recovered water to the solution, a flow controller, and a heat exchanger. One of ordinary skill in the art would have recognized that the structural features of the present application are nearly identical to those set forth in copending Application No. 09/986,636, and it would have been obvious to remove the fuel cell stack set forth in 09/986,636 to synthesize hydrogen gas in the absence of a fuel cell stack, as open-ended "comprising" language exists in the present application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.



***Claim Rejections - 35 USC § 112***

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claims 1 and 14, it is unclear what structures in the drawings correspond to "the first supplying device" and "delivery means", as "the first supplying device" could be one or more of structures 22, 24, and/or 26, while the "delivery means" could be either line 6 or recovered water line 12.

***Claim Rejections - 35 USC § 102***

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14. Claims 1-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakanishi et al. (US 6,592,741).

Nakanishi et al. disclose a fuel gas generation system, in which the system operates via supply of a metal hydride to a reactor, and further includes the following structural features: a storage means 21 for storing one of a plurality of metal hydrides, including borohydrides; a storage means for water to be supplied via injector 3; a reactor 23,71 provided with a catalyst; a supplying device between the storage means 21 and the reactor 23; a water delivery (recovery) means 91 to recover water; a return line to supply the recovered water to the solution; a control unit 10 that serves as a flow controller, in combination with a gas flow sensor 4, pressure sensor 11, and valve 12; and a heat exchanger, including a heat supply and a cooling system having piping 7, pump 8, and a heat dissipator 9 (abstract; column 1, lines 14-44; column 2, lines 6-67; column 3, lines 1-20; column 4, line 18 through column 6, line 22; column 9, line 45 through column 20, line 39; and Figures 1-12). A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Regarding the specific reactants (hydrides), the freezing point depressing agent(s), the alkaline additive(s) etc., these limitations are directed to a manner of operating the chemical hydride hydrogen generation system. The examiner notes that neither the manner of operating a disclosed device nor material/article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from the prior art. See MPEP 2114 and 2115. Further, the examiner

notes that intended use limitations, such as "for storing/supplying a chemical hydride solution" do not have patentable weight in an apparatus claim. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim."

### ***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Jung et al., Anderson, Amendola et al., (2) Hockaday et al., and Mazza et al. references are also cited as related art.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1725

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin P. Kerns *Kevin Kerns 6/13/04*  
Examiner  
Art Unit 1725

*KPK*  
kpk  
June 13, 2004